

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Application No.: 09/600.130 Confirmation No.: 8898  
Inventor : Campbell  
Filing Date : May 14, 2001  
Title : Double Nuclear Transfer Method and Results Thereof  
T.C./A.U. : 1632  
Examiner : Joseph T. Woitach

Docket No. : 105434.105001  
Customer No.: 20786

Commissioner for Patents  
PO Box 1450  
Alexandria, VA 22313-1450

**SUPPLEMENTAL INFORMATION DISCLOSURE STATEMENT**

Sir:

Pursuant to the duty of disclosure under 37 CFR §§ 1.56, 1.97 and 1.98, Applicants cite the publications listed on the accompanying PTO-1449. Copies of all listed references are enclosed. Also enclosed is a check for \$180.00 for submission of an Information Disclosure Statement. Please credit any overpayment or charge any deficiency to Deposit Account No. 11-0980.

09/03/2003 MBIZUNES 00000043 09600130

01 FC:1806

180.00 DP

Respectfully submitted,

Sherry M. Knowles, Esq.

Registration No. 33,052


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CERTIFICATE OF MAILING (37 CFR 1.8a)

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August 25, 2003

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Substitute for form 1449A/PTO		<b>Complete if Known</b>	
<b>INFORMATION DISCLOSURE STATEMENT BY APPLICANT</b> Use as many sheets as necessary Sheet <u>1</u> of <u>4</u>		Application Number	09/600,130
		Filing Date	May 14, 2001
		First Named Inventor	Campbell
		Group Art Unit	
		Examiner Name	
		Attorney Docket Number	10534.105001

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U.S. PATENT DOCUMENTS						
Examiner Initials *	Cite No. <sup>1</sup>	U.S. Patent Document		Name of Patentee or Applicant of Cited Document	Date of Publication of Cited Document MM-DD-YYYY	Pages, Columns, Lines, Where Relevant Passages/Relevant Figures Appear
		Number	Kind Code <sup>2</sup> (if known)			
76	AA	6,011,197		Strelchenko <i>et al.</i>	01-04-2000	

FOREIGN PATENT DOCUMENTS								
Examiner Initials *	Cite No. <sup>1</sup>	Foreign Patent Document			Name of Patentee or Applicant of Cited Document	Date of Publication of Cited Document DD-MM-YYYY	Pages, Columns, Lines, Where Relevant Passages or Relevant Figures Appear	T <sup>6</sup>
		Office <sup>3</sup>	Number	Kind Code <sup>2</sup> (if known)				

OTHER PRIOR ART - NON PATENT LITERATURE DOCUMENTS			
Examiner Initials *	Cite No. <sup>1</sup>	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.), date, page(s), volume-issue number(s), publisher, city and/or country where published.	T <sup>6</sup>
76	AB	Baguisi et al "Production of goats by somatic cell nuclear transfer" Nature Biotechnology (1999) 17: pp. 456-461	
	AC	R.O. Bates and B.N. Day "The Attainment of Estrus in Sows Administered with 400 IU Pregnant Mare Serum Gonadotropin and 200 IU Human Chorionic Gonadotropin at Weaning <sup>1</sup> " American Society of Animal Science Annual Meeting, New Brunswick, NJ, July 19-22 (1989).	
	AD	Bethausen <i>et al.</i> "Production of cloned pigs from in vitro systems" Nature Biotechnology. 18:1055-1059 (2000)	
	AE	Booth <i>et al.</i> , "Application of the Zona-Free Manipulation Technique to Porcine Somatic Nuclear Transfer", Cloning and Stem Cells Vol. 3, No. 4, 2001 (Mary Ann Liebert, Inc.)	
	AF	E.W. Carney and R.H. Foote "Effects of superovulation, embryo recovery, culture system and embryo transfer on development of rabbit embryos in vivo and in vitro," J. Reprod. Fert. (1990) 89, 543-551	
	AG	Chen <i>et al.</i> "Interspecies Implantation and Mitochondria Fate of Panda-Rabbit Cloned Embryos <sup>1</sup> ," Biology of Reproduction 67, 637-642 (2002)	

Examiner Signature		Date Considered	11/4/03
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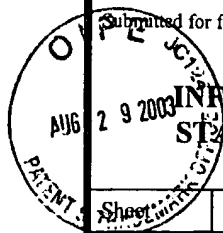
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<b>INFORMATION DISCLOSURE STATEMENT BY APPLICANT</b>		Application Number	09/600,130
		Filing Date	May 14, 2001
		First Named Inventor	Campbell
		Group Art Unit	
		Attorney Docket Number	10534.105001
Sheet 2	of 4		

OTHER PRIOR ART – NON PATENT LITERATURE DOCUMENTS			
Examiner Initials *	Cite No. <sup>1</sup>	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.), date, page(s), volume-issue number(s), publisher, city and/or country where published.	T <sup>4</sup>
	BA	Chesne <i>et al.</i> "Cloned Rabbits produced by nuclear transfer from adult somatic cells" Nature Biotechnology 20:366-369 (2002)	
	BB	Choi <i>et al.</i> "Production of Nuclear Transfer Horse Embryos by Piezo-Driven Injection of Somatic Cell Nuclei and Activation with Stallion Sperm Cytosolic Extract", Biology of Reproduction 67, 561-567 (2002)	
	BC	Chrenek, <i>et al.</i> , "Effects of Superovulation Culture and Microninjection on Development of Rabbit Embryos in vitro," Theriogenology 50: 659-666 (1998)	
	BD	Daniels, <i>et al.</i> , "Comparison of Gene Transcription in Cloned Bovine Embryos Produced by Different Nuclear Transfer Techniques," Molecular Reproduction and Development 60:281-288 (2001)	
	BE	Galli <i>et al.</i> , "Comparison of Microinjection (Piezo-Electric) and Cell Fusion for Nuclear Transfer Success with Different Cell Types in Cattle," Cloning and Stem Cells Vol. 4, pp 189-196. No. 3, 2002	
	BF	Galli <i>et al.</i> , "Embryo Production By Ovum Pick Up From Live Donors," Theriogenology 55:1341-1357 (2001)	
	BG	Garcia-Ximenez <i>et al.</i> , "Embryo Transfer in Lactating Rabbit does by Laparoscopy," Amm Reprod Soci 24. 343-346 (1991)	
	BH	Gjorret <i>et al.</i> , "Ultrastructure of Oocyte Maturation, Fertilization, and Early Embryo Development In Vitro in the Siberian Tiger (Panthera Tigris Altaica)" Molecular Reproduction and Development 63:79-88 (2002)	
	BI	H.H. Herrmann, W. Holtz "Culture of Pig Embryos Collected in Situ or After Slaughter" Animal Reproduction Science, 4 (1981) 143-147	
	BJ	Hiroyoshi Hoshi "In Vitro Production of Bovine Embryos and their Application for Embryo Transfer" Theriogenology 59 (2003) 675-685	
	BK	Jin <i>et al.</i> , "Successful Pregnancy After Transfer of Rabbit Blastocysts Grown In Vitro From Single-Cell Zygotes" Theriogenology 54:1109-1116 (2000)	
	BL	Knott <i>et al.</i> , "Porcine Sperm Factor Supports Activation and Development of Bovine Nuclear Transfer Embryos" Biology of Reproduction 66 1095-1103 (2002)	

Examiner Signature	<i>Gae Winters</i>	Date Considered	11/4/03
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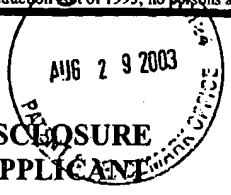
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<b>INFORMATION DISCLOSURE STATEMENT BY APPLICANT</b>		Complete if Known	
		Application Number	09/600,130
		Filing Date	May 14, 2001
		First Named Inventor	Campbell
		Group Art Unit	
Sheet	3	of	4
		Attorney Docket Number	10534.105001

OTHER PRIOR ART - NON PATENT LITERATURE DOCUMENTS			
Examiner Initials *	Cite No. <sup>1</sup>	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.), date, page(s), volume-issue number(s), publisher, city and/or country where published.	T <sup>4</sup>
JW	CA	Kubota <i>et al.</i> , "Six cloned Calves Produced from Adult Fibroblast Cells After Long-term Culture" PNAS Vol. 97 No. 3: pp. 990-995 (2000)	
/	CB	Lee <i>et al.</i> , "Cloned Zebrafish by Nuclear Transfer from Long-term-cultured Cells" Nature biotechnology Vol. 20:pp795-799 (August 2002)	
.	CC	Li <i>et al.</i> , "Conditions for In Vitro Maturation and Artificial Activation of Ferret Oocytes" Biology of Reproduction 66, 1380-1386 (2002)	
	CD	Li <i>et al.</i> , "Technical Note: Porcine Non-Surgical Embryo Transfer" J Animal Science 74:2263-3368 (1996)	
	CE	Loi <i>et al.</i> "Genetic Rescue of an endangered mammal by cross-species nuclear transfer using post-mortem somatic cells" Nature Biotechnology Vol 19: pp 962-964 (2001)	
	CF	Love & Grey "Early Abortion of Gilts as A Way Of Synchronising Oestrus and Improving Litter Size" (1993)	
	CG	Paul A. Martin, D.V.M., Ph.D. "Embryo Transfer in Swine" Embryo Transfer and Genetic Engineering 66-69	
	CH	Ogura <i>et al.</i> , "Production of Male Cloned Mice from Fresh, Cultured, and Cryopreserved Immature Sertoli Cells Biology of Reproduction 62:1579-1584 (2000)	
	CI	Piotrowska <i>et al.</i> , "Effects of Preactivation of Ooplats or Synchronization of Blastomere Nucle in G1 on Preimplantation Development of Rabbit Serial Nuclear Transfer Embryos" Biology of Reproduction 63, 677-682 (2000)	
	CJ	C.E. Pope "Embryo Technology in Conservation Efforts For Endangered Felids Theriogenology 53:163-174 (2000)	
	CK	Saikhun <i>et al.</i> , "Xenonuclear Transplantation of Buffalo ( <i>Bubalus bubalis</i> ) fetal and Adult Somatic Cell Nuclei Into Bovine ( <i>Bos Indicus</i> ) Oocyte Cytoplasm and their Subsequent Development" Theriogenology 57:1829-1837 (2002)	
	CL	Shin <i>et al.</i> "A Cat Cloned by Nuclear Transplantation" Nature Vol.415 pg 859 (February 21 2002)	
	CM	Michelle Sims and N.L. First "Production of Calves by Transfer of Nuclei From Cultured Inner Cell Mass Cells" Proc. Natl. Acad. Sci. USA Vol. 90:pp6143-6147 (June 1993)	

Examiner Signature		Date Considered	11/4/05
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				Group Art Unit	
Sheet	4	of	4	Attorney Docket Number	10534.105001

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7U	DA	Techakumphu <i>et al.</i> , "Survival of Rabbit Embryos after Synchronous or Asynchronous Transfer" Animal Reproduction Science 12:297-304 (1987)	
	DB	Wakayama <i>et al.</i> , "Mice Cloned from Embryonic Stem Cells" PNAS Vol. 96:pp14984-14989 (December 21, 1999)	
	DC	Wilmut <i>et al.</i> , "Somatic Cell Nuclear Transfer" Nature Vol.419:pp583-585 (October 10, 2002)	
	DD	Wood <i>et al.</i> , "Efficacy of Altrenogest in Synchronizing Estrus in Two Swine Breeding Programs and Effects on Subsequent Reproductive Performance of Sows" J Anim, Sci. 70:1357-1364 (1992)	
	DE	Woods <i>et al.</i> , "A Mule Cloned from Fetal Cells by Nuclear Transfer" Scienceexpress pg 1-2 (May 29 2003)	



Examiner Signature	<i>Joe W. [Signature]</i>	Date Considered	11/4/03
--------------------	---------------------------	-----------------	---------

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IN THE UNITED STATES PATENT AND TRADEMARK OFFICE



In re application of:

Campbell, K.H.S.

Appl. No. 09/600,130

Filed: July 12, 2000

For: **Double Nuclear Transfer Method  
and Results Thereof**

Confirmation No. 8898

Art Unit: 1642

Examiner: *To be assigned*

Atty. Docket: 1966.0010001/EKS/BJD

*H8*  
*KP*  
*11-1-01*  
*attachment*

**Information Disclosure Statement**

Commissioner for Patents  
Washington, D.C. 20231

Sir:

Listed on accompanying Form PTO-1449 are documents that may be considered material to the examination of this application, in compliance with the duty of disclosure requirements of 37 C.F.R. §§ 1.56, 1.97 and 1.98.

In accordance with 37 C.F.R. § 1.98(a)(3), Applicants' undersigned representative submits the following, in regards to non-English language documents AM3 cited on Form PTO 1449:

Document AM3, WIPO Publication No. WO 98/06834, is in the German language. This document appears to relate to the use of embryonic stem cells in producing transgenic animals with defined genetic traits. An abstract for WO 98/06834 in the English language, obtained from Derwent World Patents Index, is included as Document AR25.

Where the publication date of a listed document does not provide a month of publication, the year of publication of the listed document is sufficiently earlier than the effective U.S. filing date and any foreign priority date so that the month of publication is not in issue. Applicants have listed publication dates on the attached PTO-1449 based on information presently available to the undersigned. However, the listed publication dates should not be construed as an admission that the information was actually published on the date indicated.

Applicants reserve the right to establish the patentability of the claimed invention over any of the information provided herewith, and/or to prove that this information may not be prior art, and/or to prove that this information may not be enabling for the teachings purportedly offered.

This statement should not be construed as a representation that a search has been made, or that information more material to the examination of the present patent application does not exist. The Examiner is specifically requested not to rely solely on the material submitted herewith.

This Information Disclosure Statement is being filed before the mailing date of a first Office Action on the merits. No statement or fee is required.

It is respectfully requested that the Examiner initial and return a copy of the enclosed PTO-1449, and indicate in the official file wrapper of this patent application that the documents have been considered.

The U.S. Patent and Trademark Office is hereby authorized to charge any fee deficiency, or credit any overpayment, to our Deposit Account No. 19-0036. A duplicate copy of this pleading is enclosed.

Respectfully submitted,

STERNE, KESSLER, GOLDSTEIN & FOX P.L.L.C.



Brian J. Del Buono  
Attorney for Applicant  
Registration No. 42,473

Date: Oct. 25, 2001

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\*LIMITED TO MATTERS  
AND PROCEEDINGS BEFORE  
FEDERAL COURTS & AGENCIES  
\*\*REGISTERED PATENT AGENT  
\*\*\*SENIOR COUNSEL

October 24, 2001

**WRITER'S DIRECT NUMBER:**

202) 789-5525

**INTERNET ADDRESS:**

BRIAND@SKGF.COM

Commissioner for Patents  
Washington, D.C. 20231

Re: U.S. Utility Patent Application  
Appl. No. 09/600,130; § 371 Date: May 14, 2001  
For: **Double Nuclear Transfer Method and Results Thereof**  
Inventor: CAMPBELL, K.H.S.  
Our Ref: 1966.0010001/EKS/BJD/FRC

Sir:

Transmitted herewith for appropriate action are the following documents:

1. Information Disclosure Statement;
2. Listing of the cited documents on Form PTO-1449 (25 sheets);
3. A copy of each of the ninety-nine (99) cited documents (AA1, AB1, AL1, AM1, AN1, AO1, AP1, AR1, AS1, AT1, AL2, AM2, AN2, AO2, AP2, AR2, AS2, AT2, AL3, AM3, AN3, AO3, AP3, AR3, AS3, AT3, AL4, AM4, AN4, AO4, AP4, AR4, AS4, AT4, AL5, AM5, AR5, AS5, AT5, AR6, AS6, AT6, AR7, AS7, AT7, AR8, AS8, AT8, AR9, AS9, AT9, AR10, AS10, AT10, AR11, AS11, AT11, AR12, AS12, AT12, AR13, AS13, AT13, AR14, AS14, AT14, AR15, AS15, AT15, AR16, AS16, AT16, AR17, AS17, AT17, AR18, AS18, AT18, AR19, AS19, AT19, AR20, AS20, AT20, AR21, AS21, AT21, AR22, AS22, AT22, AR23, AS23, AT23, AR24, AS24, AT24, AR25, AS25, and AT25) on Form PTO-1449; and
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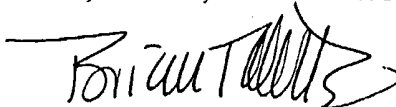
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Page 2

It is respectfully requested that the attached postcard be stamped with the date of filing of these documents, and that it be returned to our courier. In the event that extensions of time are necessary to prevent abandonment of this patent application, then such extensions of time are hereby petitioned.

The U.S. Patent and Trademark Office is hereby authorized to charge any fee deficiency, or credit any overpayment, to our Deposit Account No. 19-0036. A duplicate copy of this letter is enclosed.

Respectfully submitted,

STERNE, KESSLER, GOLDSTEIN & FOX P.L.L.C.



Brian J. Del Buono  
Attorney for Applicant  
Registration No. 42,473

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FORM PTO-1449 INFORMATION DISCLOSURE STATEMENT				ATTY. DOCKET NO. 1966.0010001/EKS/BJD		APPLICATION NO. 09/600,130	
				APPLICANT Campbell, K.H.S.			
				FILING DATE July 12, 2000		GROUP 1642	

U.S. PATENT DOCUMENTS							
EXAMINER INITIAL		DOCUMENT NUMBER	DATE	NAME	CLASS	SUB-CLASS	FILING DATE
g	AA1	5,487,992	01/30/1996	Capecchi et al.	435	172.3	06/28/1993
	AB1	5,945,577	08/31/1999	Stice et al.	800	24	01/10/1997
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FOREIGN PATENT DOCUMENTS							
EXAMINER INITIAL		DOCUMENT NUMBER	DATE	COUNTRY	CLASS	SUB-CLASS	TRANSLATION
g	AL1	WO 91/01140	02/07/1991	WIPO			Yes No
	AM1	WO 94/24274	10/27/1994	WIPO			Yes No
	AN1	WO 94/24301	10/27/1994	WIPO			Yes No
	AO1	EP 0 633 314 A1	01/11/1995	Europe			Yes No
	AP1	WO 95/20042	07/27/1995	WIPO			Yes No

OTHER (Including Author, Title, Date, Pertinent Pages, etc.)			
g	AR	1	Arbonés, M.L., et al., "Gene targeting in normal somatic cells: inactivation of the interferon-γ receptor in myoblasts," <i>Nat. Genet.</i> 6:90-97, Macmillan Magazines Ltd (1994).
	AS	1	Bertling, W.M., et al., "Use of Liposomes, Viral Capsids, and Nanoparticles as DNA Carriers," <i>Biotechnol. Appl. Biochem.</i> 13:390-405, Academic Press, Inc. (1991).
	AT	1	Brandon, E.P., et al., "Targeting the mouse genome: a compendium of knockouts (part 1)," <i>Curr. Biol.</i> 5:625-634, Current Biology Ltd. (1995).

EXAMINER	<i>[Signature]</i>	DATE CONSIDERED	11/4/03
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FOREIGN PATENT DOCUMENTS						
EXAMINER INITIAL		DOCUMENT NUMBER	DATE	COUNTRY	CLASS	TRANSLATION
	AL2	WO 96/07732	03/14/1996	WIPO		Yes No
	AM2	WO 97/07668	03/06/1997	WIPO		Yes No
	AN2	WO 97/07669	03/06/1997	WIPO		Yes No
	AO2	EP 0 774 510 A1	05/21/1997	Europe		Yes No
	AP2	WO 97/37009	10/09/1997	WIPO		Yes No

OTHER (Including Author, Title, Date, Pertinent Pages, etc.)			
76	AR	2	Brandon, E.P., et al., "Targeting the mouse genome: a compendium of knockouts (part II)," <i>Curr. Biol.</i> 5:758-765, Current Biology Ltd. (1995).
1	AS	2	Brandon, E.P., et al., "Targeting the mouse genome: a compendium of knockouts (part III)," <i>Curr. Biol.</i> 5:873-881, Current Biology Ltd. (1995).
	AT	2	Campbell, K.H.S., et al., "Sheep cloned by nuclear transfer from a cultured cell line," <i>Nature</i> 380:64-66, Macmillan Magazines Ltd. (1996).

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FOREIGN PATENT DOCUMENTS						
EXAMINER INITIAL		DOCUMENT NUMBER	DATE	COUNTRY	CLASS	TRANSLATION
	AL3	WO 97/49804	12/31/1997	WIPO		Yes No
	AM3	WO 98/06834	02/19/1998	WIPO		Yes No X
	AN3	WO 98/07841	02/26/1998	WIPO		Yes No
	AO3	WO 98/27214	06/25/1998	WIPO		Yes No
	AP3	WO 98/30683	07/16/1998	WIPO		Yes No

OTHER (Including Author, Title, Date, Pertinent Pages, etc.)			
76	AR	3	Cao, X., et al., "Effects of fibroblast-mediated interleukin 3 and interleukin 6 gene therapy on hematopoiesis in mice treated with 5-fluorouracil," J. Mol. Med. 76:782-789, Springer-Verlag (October 1998).
1	AS	3	Cibelli, J.B., et al., "Transgenic bovine chimeric offspring produced from somatic cell-derived stem-like cells," Nature Biotechnol. 16:642-646, Macmillan Magazines Ltd. (July 1998).
1	AT	3	Cibelli, J.B., et al., "Production of Germline Chimeric Bovine Fetuses From Transgenic Embryonic Stem Cells," Theriogenology 47:241, Elsevier Science (January 1997).

EXAMINER	<i>Joe W. [Signature]</i>	DATE CONSIDERED	11/4/03
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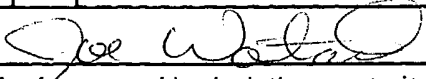
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FOREIGN PATENT DOCUMENTS							
EXAMINER INITIAL		DOCUMENT NUMBER	DATE	COUNTRY	CLASS	SUB-CLASS	TRANSLATION
	AL4	WO 98/37183	08/27/1998	WIPO			Yes No
	AM4	WO 98/39416	09/11/1998	WIPO			Yes No
	AN4	WO 99/01163	01/14/1999	WIPO			Yes No
	AO4	WO 99/01164	01/14/1999	WIPO			Yes No
	AP4	WO 99/21415	05/06/1999	WIPO			Yes No

OTHER (Including Author, Title, Date, Pertinent Pages, etc.)			
AR	4	Cibelli, J.B., et al., "Cloned Transgenic Calves Produced from Nonquiescent Fetal Fibroblasts," <i>Science</i> 280:1256-1258, American Association for the Advancement of Science (May 1998).	
AS	4	Cole-Strauss, A., et al., "Correction of the Mutation Responsible for Sickle Cell Anemia by an RNA-DNA Oligonucleotide," <i>Science</i> 273:1386-1389, American Association for the Advancement of Science (1996).	
AT	4	Colman, A. and Garner, I., "Transgenic Animals in Science and Industry," <i>Pharm. Forum</i> 5 (1996).	

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	AL5	WO 00/42174	07/20/2000	WIPO			Yes No
	AM5	WO 01/49106 A2	07/12/2001	WIPO			Yes No
	AN						Yes No
	AO						Yes No
	AP						Yes No

OTHER (Including Author, Title, Date, Pertinent Pages, etc.)			
76	AR	5	Deng, C. and Capecchi, M.R., "Reexamination of Gene Targeting Frequency as a Function of the Extent of Homology between the Targeting Vector and the Target Locus," <i>Mol. Cell. Biol.</i> 12:3365-3371, American Society for Microbiology (1992).
/	AS	5	Dominko, T., et al., "Bovine Oocyte as a Universal Recipient Cytoplasm in Mammalian Nuclear Transfer," <i>Theriogenology</i> 49:385, Elsevier Science (January 1998).
/	AT	5	Fiering, S., et al., "An 'in-out' using gene targeting and FLP recombinase for the functional dissection of complex DNA regulatory elements: Analysis of the $\beta$ -globin locus control region," <i>Proc. Natl. Acad. Sci. USA</i> 90:8469-8473, National Academy of Sciences (1993).

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OTHER (Including Author, Title, Date, Pertinent Pages, etc.)			
96	AR	6	Finn, G.K., et al., "Homologous Plasmid Recombination Is Elevated in Immortally Transformed Cells," <i>Mol. Cell. Biol.</i> 9:4009-4017, American Society for Microbiology (1989).
/	AS	6	Fulka, J., et al., "Cloning by somatic cell nuclear transfer," <i>Bioessays</i> 20:847-851, John Wiley and Sons, Inc. (October 1998).
/	AT	6	Hanson, K.D. and Sedivy, J.M., "Analysis of Biological Selections for High-Efficiency Gene Targeting," <i>Mol. Cell. Biol.</i> 15:45-51, American Society for Microbiology (1995).

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AL						Yes No
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AN						Yes No
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AP						Yes No

OTHER (Including Author, Title, Date, Pertinent Pages, etc.)			
700 /	AR	Z	Hortelano, G., et al., "Persistent Delivery of Factor IX in Mice: Gene Therapy for Hemophilila Using Implantable Microcapsules," <i>Human Gene Ther.</i> 10:1281-1288, Mary Ann Liebert, Inc. (May 1999).
	AS	Z	Itzhaki, J.E., et al., "Construction by gene targeting in human cells of a 'conditional' CDC2 mutant that rereplicates its DNA," <i>Nature Genetics</i> 15:258-265, Macmillan Magazines Ltd. (1997).
	AT	Z	Johnson, R.S., et al., "Targeting of Nonexpressed Genes in Embryonic Stem Cells Via Homologous Recombination," <i>Science</i> 245:1234-1236, American Association for the Advancement of Science (1989).

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	AM						Yes No
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	AP						Yes No

OTHER (Including Author, Title, Date, Pertinent Pages, etc.)			
96	AR	8	Kato, Y. and Tsunoda, Y., "Totipotency and Pluripotency of Embryonic Nuclei in the Mouse," <i>Mol. Reprod. Develop.</i> 36:276-278, Wiley-Liss, Inc. (1993).
/	AS	8	Kato, Y., et al., "Eight Calves Cloned from Somatic Cells of a Single Adult," <i>Science</i> 282:2095-2098, American Association for the Advancement of Science (December 1998).
/	AT	8	Kono, T., "Nuclear transfer and reprogramming," <i>Reviews Reprod.</i> 2:74-80, Society for the Study of Fertility (1997).

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OTHER (Including Author, Title, Date, Pertinent Pages, etc.)			
96	AR	2	Kren, B.T., et al., "In Vivo site-directed mutagenesis of the factor IX gene by chimeric RNA/DNA Oligonucleotides," <i>Nature Med.</i> 4:285-290, Macmillan Magazines Ltd. (March 1998).
	AS	2	Kubota, C., et al., "Six cloned calves produced from adult fibroblast cells after long-term culture," <i>Proc. Natl. Acad. Sci. USA</i> 97:990-995, National Academy of Sciences (February 2000).
	AT	2	Kwon, O.Y. and Kono, T., "Production of identical sextuplet mice by transferring metaphase nuclei from four-cell embryos," <i>Proc. Natl. Acad. Sci. USA</i> 93:13010-13013, National Academy of Sciences (1996).

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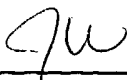
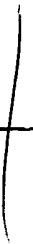
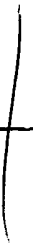
  

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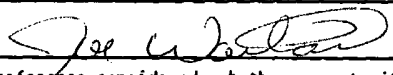
  

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OTHER (Including Author, Title, Date, Pertinent Pages, etc.)			
	AR	10	Liang, F., et al., "Chromosomal double-strand break repair in Ku80-deficient cells," <i>Proc. Natl. Acad. Sci. USA</i> 93:8929-8933, National Academy of Sciences (1996).
	AS	10	Lukacsovich, T., et al., "Repair of a specific double-strand break generated within a mammalian chromosome by yeast endonuclease I-SceI," <i>Nucl. Acids Res.</i> 22:5649-5657, Oxford University Press (1994).
	AT	10	Ma, T., et al., "Generation and Phenotype of a Transgenic Knockout Mouse Lacking the Mercurial-Insensitive Water Channel Aquaporin-4," <i>J. Clin. Invest.</i> 100:957-962, Rockefeller University Press, Inc. (1997).

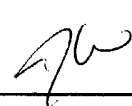
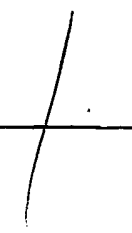

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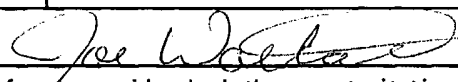
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OTHER (Including Author, Title, Date, Pertinent Pages, etc.)			
	AR	11	McCreath, K.J., et al., "Production of gene-targeted sheep by nuclear transfer from cultured somatic cells," <i>Nature</i> 405:1066-1069, Macmillan Magazines Ltd. (July 2000).
	AS	11	McWhir, J., et al., "Selective ablation of differentiated cells permits isolation of embryonic stem cell lines from murine embryos with a non-permissive genetic background," <i>Nat. Genet.</i> 14:223-226, Macmillan Magazines Ltd. (1996).
	AT	11	Mitalipova, M., et al., "Bovine Oocyte Cytoplasm Reprograms Somatic Cell Nuclei from Various Mammalian Species," <i>Theriogenology</i> 49:389, Elsevier Science (January 1998).

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OTHER (Including Author, Title, Date, Pertinent Pages, etc.)			
96	AR	12	Müller-Ladner, U., et al., "Gene Transfer of Cytokine Inhibitors into Human Synovial Fibroblasts in the SCID Mouse Model," <i>Arthritis &amp; Rheum.</i> 42:490-497, John Wiley and Sons, Inc. (March 1999).
7	AS	12	Nickoloff, J.A. and Reynolds, R.J., "Transcription Stimulates Homologous Recombination in Mammalian Cells," <i>Mol. Cell. Biol.</i> 10:4837-4845, American Society for Microbiology (1990).
7	AT	12	Piedrahita, J.A., et al., "Generation of Transgenic Porcine Chimeras Using Primordial Germ Cell-Derived Colonies," <i>Biol. Reprod.</i> 58:1321-1329, Society for the Study of Reproduction (May 1998).

EXAMINER	<i>Joe Walter</i>	DATE CONSIDERED	11/4/05
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OTHER (Including Author, Title, Date, Pertinent Pages, etc.)			
76	AR	13	Porter, A.C.G. and Dallman, M.J., "Gene Targetting. Techniques and Applications to Transplantation," <i>Transplantation</i> 64:1227-1235, Williams and Wilkins (1997).
1	AS	13	Prather, R.S., et al., "Nuclear Transplantation in Early Pig Embryos," <i>Biol. Reprod.</i> 41:414-418, Society for the Study of Reproduction (1989).
1	AT	13	Prather, R.S. and First, N.L., "Cloning embryos by nuclear transfer," <i>J. Reprod. Fert.</i> 41 suppl.:125-134, Society for the Study of Fertility (1990).

EXAMINER	<i>Joe W. Wilson</i>	DATE CONSIDERED	11/4/02
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		APPLICANT Campbell, K.H.S.			
		FILING DATE July 12, 2000		GROUP 1642	

U.S. PATENT DOCUMENTS						
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OTHER (Including Author, Title, Date, Pertinent Pages, etc.)			
	AR	14	Ramirez-Solis, R. and Bradley, A., "Advances in the use of embryonic stem cell technology," <i>Curr. Opin. Biol. Biotechnol.</i> 5:528-533, Current Biology Ltd. (1994).
	AS	14	Régulier, E., et al., "Continuous delivery of human and mouse erythropoietin in mice by genetically engineered polymer encapsulated myoblasts," <i>Gene Ther.</i> 5:1014-1022, Stockton Press (August 1998).
	AT	14	Ross, M.E., et al., "Identification of a Functional Glucocorticoid Response Element in the Phenylethanolamine N-Methyltransferase Promoter Using Fusion Genes Introduced into Chromatin Cells in Primary Culture," <i>J. Neurosci.</i> 10:520-530, Society for Neuroscience (1990).

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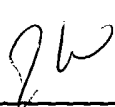
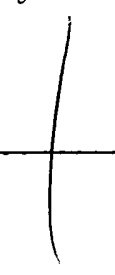
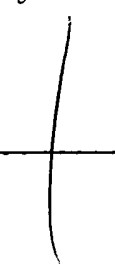
  

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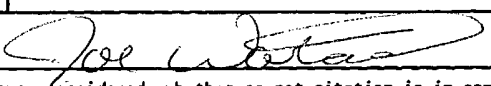
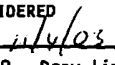
  

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	AO						Yes No
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OTHER (Including Author, Title, Date, Pertinent Pages, etc.)			
	AR	15	Russell, D.W. and Hirata, R.K., "Human gene targeting by viral vectors," <i>Nat. Genet.</i> 18:325-330, Macmillan Magazines Ltd. (April 1998).
	AS	15	Sargent, R.G., <i>et al.</i> , "Repair of Site-Specific Double-Strand Breaks in a Mammalian Chromosome by Homologous and Illegitimate Recombination," <i>Mol. Cell. Biol.</i> 17:267-277, American Society for Microbiology (1997).
	AT	15	Scheerer, J.B. and Adair, G.M., "Homology Dependence of Targeted Recombination at the Chinese Hamster APRT Locus," <i>Mol. Cell. Biol.</i> 14:6663-6673, American Society for Microbiology (1994).

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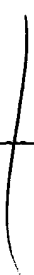
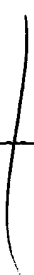
  

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	AO						Yes No
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OTHER (Including Author, Title, Date, Pertinent Pages, etc.)			
	AR	16	Schnieke, A.E., et al., "Human Factor IX Transgenic Sheep Produced by Transfer of Nuclei from Transfected Fetal Fibroblasts," <i>Science</i> 278:2130-2133, American Association for the Advancement of Science (1997).
	AS	16	Sedivy, J.M. and Dutriaux, A., "Gene targeting and somatic cell genetics: a rebirth or a coming of age?" <i>Trends Genet.</i> 15:88-90, Elsevier Science (March 1999).
	AT	16	Shesely, E.G., et al., "Correction of a human $\beta^s$ -globin gene by gene targeting," <i>Proc. Natl. Acad. Sci. USA</i> 88:4294-4298, National Academy of Sciences (1991).

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FORM PTO-1449 <u>INFORMATION DISCLOSURE STATEMENT</u>		ATTY. DOCKET NO. 1966.0010001/EKS/BJD		APPLICATION NO. 09/600,130	
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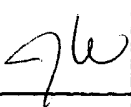
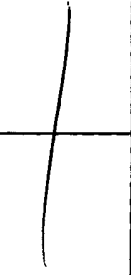

  

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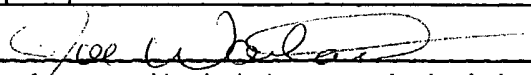
  

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OTHER (Including Author, Title, Date, Pertinent Pages, etc.)			
	AR	17	Shim, H., et al., "Isolation of Pluripotent Stem Cells from Cultured Porcine Primordial Germ Cells," <i>Biol. Reprod.</i> 57:1089-1095, Society for the Study of Reproduction (1997).
	AS	17	Smith, A., "Cell therapy: In search of pluripotency," <i>Curr. Biol.</i> 8:R802-R804, Current Biology Ltd. (November 1998).
	AT	17	Smithies, O., et al., "Insertion of DNA sequences into the human chromosomal $\beta$ -globin locus by homologous recombination," <i>Nature</i> 317:230-234, Macmillan Magazines Ltd. (1985).

EXAMINER 	DATE CONSIDERED 4/4/05
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	AP						Yes No

OTHER (Including Author, Title, Date, Pertinent Pages, etc.)			
<div style="font-size: 2em; font-family: cursive;">96</div>	AR	18	Stacey, A., et al., "Use of Double-Replacement Gene Targeting to Replace the Murine $\alpha$ -lactalbumin Gene with Its Human Counterpart in Embryonic Stem Cells and Mice," <i>Mol. Cell. Biol.</i> 14:1009-1016, American Society for Microbiology (1994).
	AS	18	Stacey, A., et al., "Lactation is disrupted by $\alpha$ -lactalbumin deficiency and can be restored by human $\alpha$ -lactalbumin gene replacement in mice," <i>Proc. Natl. Acad. Sci. USA</i> 92:2835-2839, National Academy of Sciences (1995).
	AT	18	Stewart, C.L., et al., "Stem Cells from Primordial Germ Cells Can Reenter the Germ Line," <i>Dev. Biol.</i> 161:626-628, Academic Press, Inc. (1994).

EXAMINER <span style="font-family: cursive; font-size: 1.2em;">Joe W. [Signature]</span>	DATE CONSIDERED 11/4/03
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	AN					Yes No
	AO					Yes No
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OTHER (Including Author, Title, Date, Pertinent Pages, etc.)			
76	AR	19	Stice, S.L., et al., "Cloning: New Breakthroughs Leading to Commercial Opportunities," <i>Theriogenology</i> 49:129-138, Elsevier Science (January 1998).
	AS	19	Stinnakre, M.G., et al., "Creation and phenotypic analysis of $\alpha$ -lactalbumin-deficient mice," <i>Proc. Natl. Acad. Sci. USA</i> 91:6544-6548, National Academy of Sciences (1994).
	AT	19	Strauss, M., "The site-specific correction of genetic defects," <i>Nature Med.</i> 4:274-275, Macmillan Magazines Ltd. (March 1998).

EXAMINER <span style="float: right;"><i>Joe Webster</i></span>	DATE CONSIDERED 11/4/03
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	AP						Yes No

OTHER (Including Author, Title, Date, Pertinent Pages, etc.)			
<div style="font-size: 2em; font-family: cursive;">96</div>	AR	20	Suraokar, M. and Bradley, A., "New and Views. Targeting Sheep, " <i>Nature</i> 405:1004-1005, Macmillan Magazines Ltd. (June 2000).
<div style="font-size: 2em; font-family: cursive;">7</div>	AS	20	Te Riele, H., et al., "Highly efficient gene targeting in embryonic stem cells through homologous recombination with isogenic DNA constructs," <i>Proc. Natl. Acad. Sci. USA</i> 89:5128-5132, National Academy of Sciences (1992).
<div style="font-size: 2em; font-family: cursive;">7</div>	AT	20	Thyagarajan, B., et al., "The effect of target site transcription on gene targeting in human cells in vitro," <i>Nucl. Acids Res.</i> 23:2784-2790, Oxford University Press (1995).

EXAMINER <div style="font-size: 1.5em; font-family: cursive;">Joe W. [Signature]</div>	DATE CONSIDERED <div style="font-size: 1.5em; font-family: cursive;">11/4/03</div>
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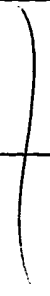
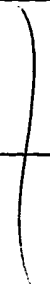
  

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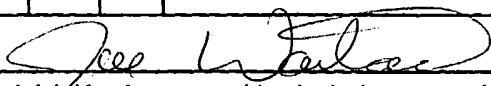
  

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	AP						Yes No

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	AR	21	Thyagarajan, B., et al., "Characterization of homologous DNA recombination activity in normal and immortal mammalian cells," <i>Nucl. Acids Res.</i> 24:4084-4091, Oxford University Press (1996).
	AS	21	Trounson, A. and Pera, M., "Potential benefits of cell cloning for human medicine," <i>Reprod. Fertil. Dev.</i> 10:121-125, CSIRO Publishing (January 1998).
	AT	21	Vignon, X., et al., "Development of Bovine Nuclear Transfer Embryos Reconstituted with Quiescent and Proliferative Skin Fibroblasts," <i>Theriogenology</i> 51:216, Elsevier Science (January 1999).

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	AR	22	Wakayama, T., et al., "Full-term development of mice from enucleated oocytes injected with cumulus cell nuclei," <i>Nature</i> 394:369-374, Macmillan Magazines Ltd. (July 1998).
	AS	22	Wells, D.N., et al., "The Use of Adult Somatic Cell Nuclear Transfer to Preserve the Last Surviving Cow of the Enderby Island Cattle Breed," <i>Theriogenology</i> 51:217, Elsevier Science (January 1999).
	AT	22	Wheeler, M.B., "Development and Validation of Swine Embryonic Stem Cells: a Review," <i>Reprod. Fertil. Dev.</i> 6:563-568, CSIRO Publishing (1994).

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OTHER (Including Author, Title, Date, Pertinent Pages, etc.)			
	AR	23	Wilmut, I., et al., "Viable offspring derived from fetal and adult mammalian cells," <i>Nature</i> 385:810-813 (1997).
	AS	23	Wolf, E., et al., "Nuclear transfer in mammals: Recent developments and future perspectives," <i>J. Biotech.</i> 65:99-110, Elsevier Science (October 1998).
	AT	23	Wu, H., et al., "Double replacement: Strategy for efficient introduction of subtle mutations into the murine <i>Colla-1</i> gene by homologous recombination in embryonic stem cells," <i>Proc. Natl. Acad. Sci. USA</i> 91:2819-2823, National Academy of Sciences (1994).

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70	AR	24	Yáñez, R.J. and Porter, A.C.G., "Therapeutic gene targeting," <i>Gene Ther.</i> 5:149-159, Stockton Press (February 1998).
7	AS	24	Zakhartchenko, V., et al., "Nuclear Transfer in the Bovine Embryo: Developmental Potential of Cultured Adult Cells," <i>Theriogenology</i> 51:218, Elsevier Science (January 1999).
7	AT	24	Zhen, L., et al., "Gene targeting of X chromosome-linked chronic granulomatous disease locus in a human myeloid leukemia cell line and rescue by expression of recombinant gp91 <sup>phox</sup> ," <i>Proc. Natl. Acad. Sci. USA</i> 90:9832-9836, National Academy of Sciences (1993).

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OTHER (Including Author, Title, Date, Pertinent Pages, etc.)			
	AR	25	Dialog File 351, Accession No. 11714391, Derwent WPI English language abstract for WO 98/06834 (Document AM3).
	AS	25	Pending Non-Provisional United States Patent Application No. 09/475,674, Colman <i>et al.</i> , filed December 30, 1998.
	AT	25	Pending Non-Provisional United States Patent Application No. 09/614,864, Colman <i>et al.</i> , filed July 12, 2000.

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